Walton County

Hurricane and Storm Damage Reduction Study

Walton County, Florida

Feasibility Report and Environmental Assessment

Presented by
Col. Donald (Ed) Jackson
Commander, South Atlantic Division

Civil Works Review Board
13 December 2012

Study Partner

- Walton County, Florida Board of County Commission
- Ms. Dawn Moliterno — Exec Director South Walton Tourism Develop Council
- Ms. Sara Comander — County Commissioner
- Mr. William Imfeld — County Commissioner
- Mr. Kenneth Pridgen — County Commissioner
- Mr. Brad Pickel — Project Manager

Walton County - HQ-DC Team Members

- Mr. James Dalton, Leader, SAD-RIT
- Ms. Stacey Brown, SAD-RIT Deputy
- Ms. Joana Savinon, Planner, SAD-RIT
- Mr. Wesley Coleman, Chief, Office of Water Project Review
- Mr. Andrea Walker, Plan Formulation Review, OWPR Leader
- Mr. Charles (Lee) Ware, Plan Formulation Team Leader, OWPR
- Mr. Tom Hughes, Economic Team Leader, OWPR
- Mr. Jeff Trulick, Environmental Review, OWPR
- Mr. Scott Murphy, HQ Counsel
- Ms. Brenda Johnson-Turner, HQ Real Estate
- Mr. Charley Chesnutt, HQ Engineering and Construction

Walton County HSDR Project - SAD Team Members

- Mr. Wilbert Paynes, Chief Planning and Policy Division
- Mr. Terry Stratton, Senior Economist
- Ms. Vechere Lampley, Environmental Reviewer
- Mr. David Bauman, SAD Planning Lead for Mobile District
- Mr. Kaiser Edmond, Engineering
- Ms. Susie Vohlken, Cost Engineering
- Mr. John Cline, Real Estate
- Ms. Barbara Altera, Office of Counsel

Rationale for SAD Support

- Concur with District Commander's findings & recommendations.
- Plan is consistent with Federal, State, and local laws and ordinances.
- Plan provides significant reduction in storm related damage potential for structures and contents along the Walton County shoreline
- Plan is the Sponsor's locally preferred plan (LPP)
- Plan will provides national storm damage risk reduction benefits.
  - Consistent with Federal participation in Coastal Barrier Resource Act (CBRA) Zones
  - Plan strongly supported by Non-Federal sponsor
  - The ASA(CW) allows Corps to recommend the LPP by memorandum dated 7 FEB 2012
- Anticipate favorable response to the draft Chief's Report.

Certification of Legal & Policy Compliance

- Legal certification of the final Feasibility Report and Environmental Assessment made by SAM District Counsel.
- IEPR Review completed 9 Aug 2012
- Technical and Policy Compliance:
  - Agency Technical Review certification complete-The National Coastal Storm Damage Reduction Planning Center of Expertise (CSDR-PCX), Review completed October 2012.
  - Policy compliance issues have been resolved.

SAD Quality Assurance Activities

- Continuous involvement throughout the development of the Integrated Feasibility Report and EA.
- Worked w/ CSDR - PCX, and Vertical Team in establishment of peer review plan.
- Review of Policy Compliance Memo and Agency Technical Reviews: all issues identified in AFB, Draft and Final Reports have been adequately addressed.

SAD Recommendation

- Approve Final Report
- Release for State and Agency Review
- Complete Chief's Report

Walton County

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Walton County, Florida

Feasibility Report and Environmental Assessment

Presented by
COL Steven J. Roemhildt
Mobile District

Civil Works Review Board
13 December 2012

Purpose of CWRB Briefing

- Provide an overview of the Walton County Hurricane and Storm Damage Reduction (HSDR) Feasibility Study.
- Assure agency policy compliance.
- Obtain CWRB approval to release final report for State and Agency review.

District Presentation Outline

- Overview of Feasibility Study
  - Study Authority & Purpose
  - Study Location
  - Problem Description
  - Plan Formulation
- Recommended Plan
  - Plan Features
  - Risk Management
  - Cost Share
- Environmental Compliance
- Public Involvement
- Technical Reviews
- Study Summary
- Recommendation

Bottom Line Up Front

Report recommends an 18.8 mile beach fill project

- **50-foot wide berm, added dune width of 10 or 30 feet**
- **Initial fill totals 3,868,000 cubic yards (cy)**
- **Four renourishments (1,789,000 cy each) on a 10-year cycle**

Total Project First Cost: $61,397,000

Total Project Cost (including renourishments): $164,437,000

- **Cost share (Federal/non-Federal): 28% / 72%**
- **Annual Benefits: $7,570,000**
- **Annual Cost: $5,044,000**
- **Benefit /Cost Ratio: 1.5 to 1**

Study Authority and Agreement

Study authorized by:

Resolution (unnumbered) by the Senate Committee on Environment and Public Works (adopted 25 July, 2002).

Resolution (Docket 2690) of the House Committee on Transportation and Infrastructure (adopted 24 July, 2002).

Feasibility Cost Sharing Agreement:

Executed 19 December 2003.

Current Study Cost: $3,939,000.

Study Partner

Non-Federal Sponsor

Walton County Board of County Commissioners

Point of contact is Dawn Moliterno, Executive Director, Walton County Tourist Development Council (TDC).

Walton County, Florida

Dawn Moliterno
Executive Director
Walton County Tourist Development Council

Demographics

- Tourism industry is primary economic engine with beaches as #1 asset
- Over 40% of all lands in southern end of county state-owned in conservation areas limiting developable areas.
- 200% population growth increase between 1990 and 2010 leading to increased pressure on shorefront in South Walton County.

Economic Impact of Tourism (2011)

- Over $746 million in Direct Economic Impact
- Over $243 million in wages
- 8,769 jobs created in 2011
- Over 2.7 million visitors in 2011
- Monthly bed tax collection (visitation) increases for 17 consecutive months

Life and safety issues

- 2004 Hurricane Ivan
  - Over $7 million in public losses
- 2005 Hurricane Dennis
  - Over $10 million in public losses
- 2005 Hurricane Katrina
  - Over $380,000 in public losses
- 11 Major Structures (7 multi-family)were damaged in 2004 and required substantial repairs
- 33 Major Structures (26 habitable) were damaged in 2005 and required substantial repairs
- In addition, Walton County issued Emergency Permits for over 210 properties to perform temporary measures to protect properties

Life and safety issues
FDEP Post-Dennis Report (2005)

- "Major structural damage was sustained along Walton County's coast and was related to storm surge and waves"
- "Major damage to non-habitable understructure enclosures and appurtenant structures was also due to storm surge and waves."
- "In addition, many older dwelling structures that are located at the top of the steep, eroded dune bluff are in imminent danger of structural damage as the soil beneath the concrete slab foundations slips down the unstable slope."

Recent environmental impacts due to current beach conditions

- Walton County is home to four types of nesting sea turtles
  - Loggerhead, Leatherback, Kemp's Ridley and Green
- In 2012, Tropical Storm Debbie and Hurricane Isaac produced a storm surge large enough to overtop beaches and impact sea turtle nesting
  - 97 nests were lain in 2012
  - 3 nests were lost to Tropical Storm Debbie
  - 11 nests were lost to Hurricane Isaac

Walton County is ready to go!

- Since 1999, Walton County has collected bed tax revenues for beach nourishment over and above property tax revenues
  - Current collections total nearly $3 million per year
  - Current bonding/loan capability sufficient to cover non-federal cost share
- Walton County has established a progressive beach management program to protect, restore, and enhance beach and dune system
- Walton County has strong partnerships with state and federal agencies, and a record of accomplishments in coastal management projects.

Walton County Study Purpose

Assess the needs for hurricane and storm damage reduction and opportunities for restoration and protection

- Inventory potential damages
- Identify protection measures
- Conduct engineering, economic and environmental analyses
- Evaluate measures to reduce damages
- Recommend cost-effective solution
- Incorporate stakeholders in planning process

Study Location

- Walton County located in the "panhandle" area of Florida
- Walton County has 26 miles of coastal shoreline on the Gulf of Mexico
- About 6 miles of shoreline includes three Florida state park areas
- Shoreline includes 15 coastal dune lakes

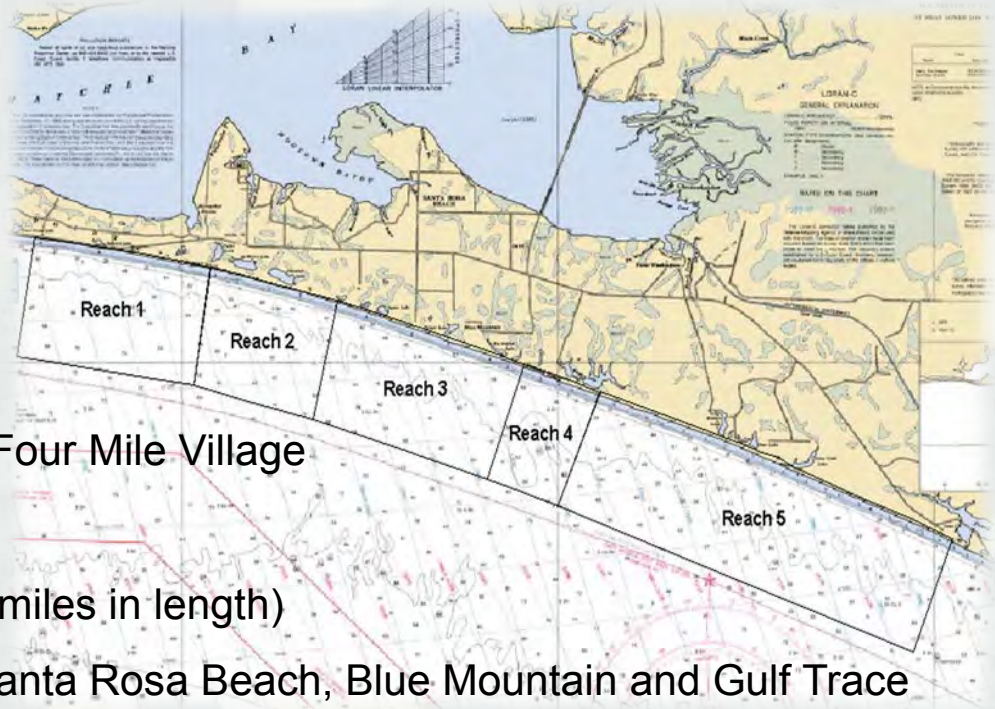
Study Location (continued)

- Walton County shoreline is characterized by high dune elevations
- Dune elevations range from 11.5 to 44.5 feet and average 25.5 feet.
- Along the mid-section of Walton County, bluff elevations exceed 60 feet in height .
- Bluff erosion and undercutting occur in this area due to the interface of relatively low flat beaches and the bluff toe.

Study Location (continued)

The study area was divided into five major Study Reaches.

Each reach was a collection of neighborhoods in the coastal community.



Reach 1 – Miramar Beach, Sandestin and Four Mile Village (4.7 miles in length)

Reach 2 – Topsail Hill State Preserve (3.5 miles in length)

Reach 3 – Beach Highlands, Dune Allen, Santa Rosa Beach, Blue Mountain and Gulf Trace (3.6 miles in length)

Reach 4 – Grayton Beach State Park (West), Grayton Beach, Grayton Beach State Park (East) (2.2 miles in length)

Reach 5 – Watercolor, Seaside, Seagrove, Watersound Seacrest Rosemary and Inlet Beach (9.9 miles in length)

Problem Description

- Walton County's shoreline is receding with protective dunes and high bluffs being destroyed by hurricane and storm forces .

- During the late 1990s, the area endured several strong hurricanes resulting in extensive shoreline erosion providing the impetus locally to pursue a HSDR study.
- Additional storms in 2004 and 2005 further exacerbated shoreline damages.

Problem Description (Continued)

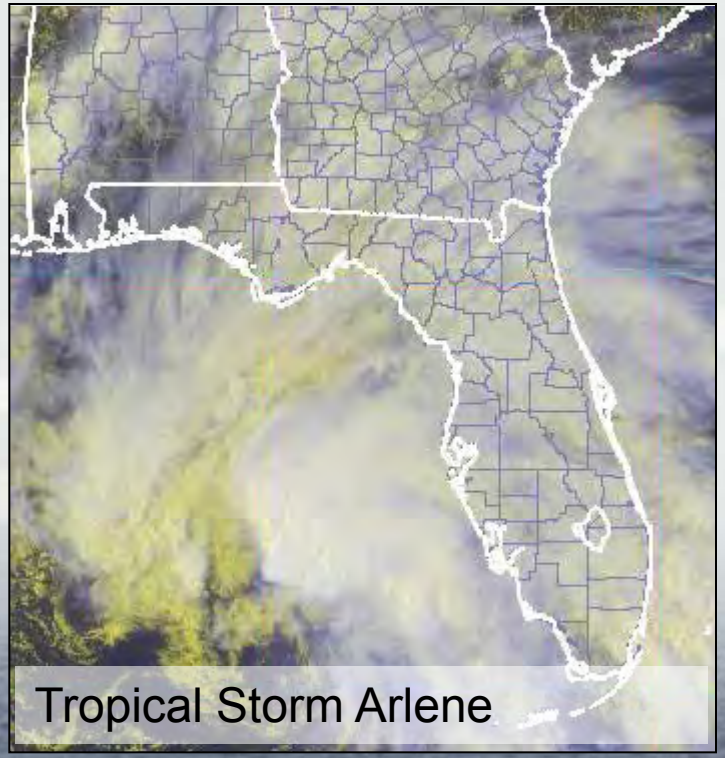
- In Sep 2004, the area was impacted by Hurricane Ivan.

Hurricane Ivan

- Major dune recession greater than 10 feet occurred.
- 7 multifamily structures destroyed or sustained major damage
- 49 dwellings sustained moderate to minor damage to understructure by erosion.

Problem Description (Continued)

- In June 2005, the area was impacted by Tropical Storm Arlene.
  - Moderate dune erosion.



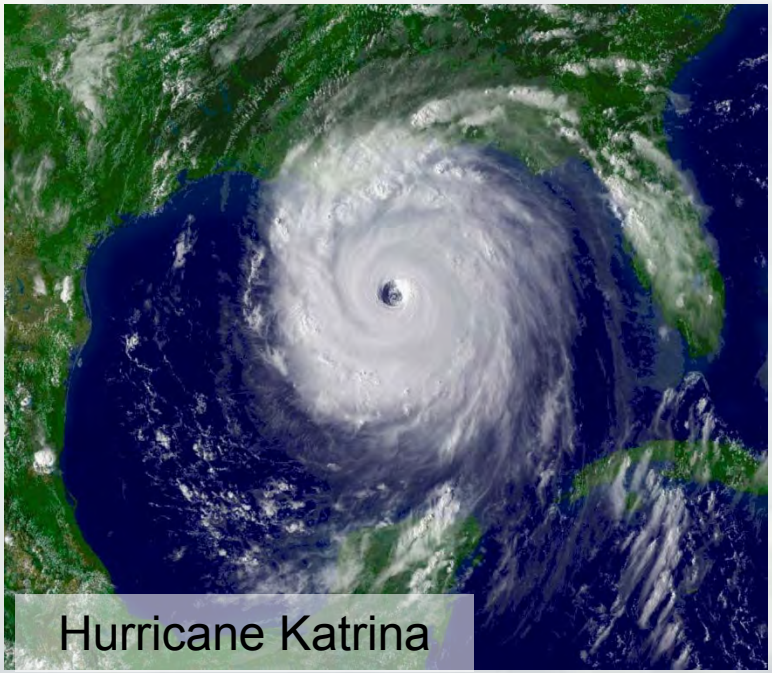
Problem Description (Continued)

- In July 2005, the area was impacted by Hurricane Dennis

- Major dune recession greater than 10 feet occurred.
- 10 single-family dwellings destroyed.
- 9 single-family and two multi-family dwellings with major damage.
- 25 dwellings left in imminent danger of collapse by erosion.

Problem Description (Continued)

- In August 2005, the area was impacted by Hurricane Katrina.



Hurricane Katrina

- Major dune recession greater than 10 feet on western portion of County shoreline.
- 12 single-family dwellings with major structural damage.
- 1 multi-family dwelling with major structural damage.

Walton County Florida HSDR Feasibility Study

Pre-Dennis

Pre-Dennis

Post-Dennis

Post-Dennis

Walton County Florida HSDR Feasibility Study

Post-Dennis

Post-Dennis

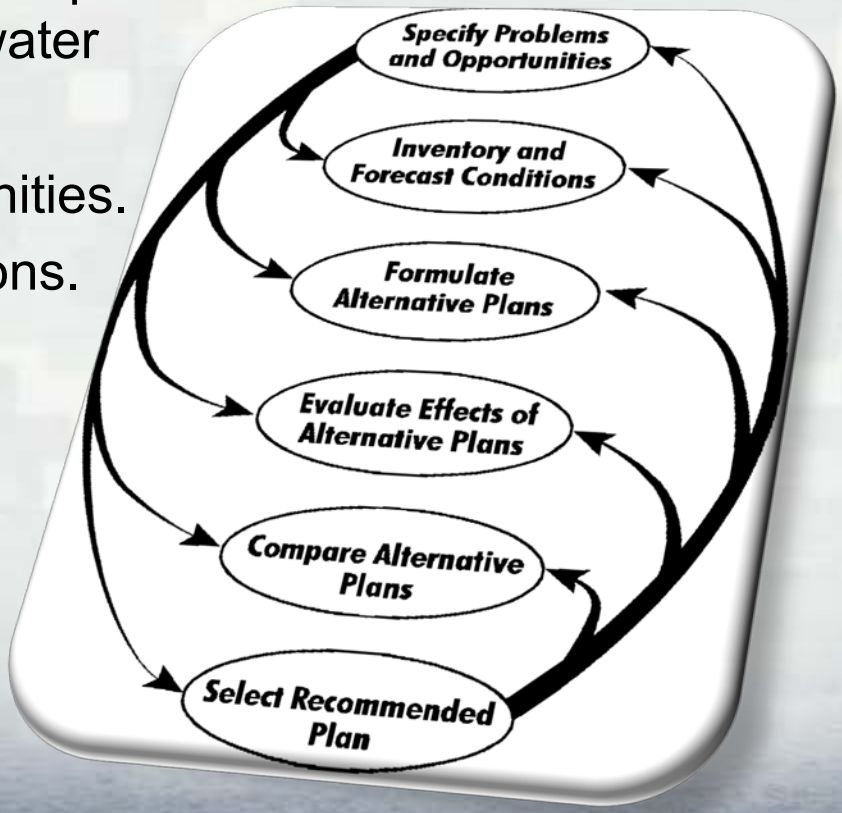
Post-Dennis

Post-Dennis

Plan Formulation

This study utilized the traditional six-step planning process commonly used in water resource development studies :

- Step 1 - Identify problems and opportunities.
- Step 2 - Inventory and forecast conditions.
- Step 3 - Formulate alternative plans.
- Step 4 - Evaluate alternative plans.
- Step 5 - Compare alternative plans.
- Step 6 - Select a plan.



Problems and Opportunities

Problems caused by hurricane and storm induced erosion:

- Property and infrastructure damage
- Beach and dune habitat damage
- Reduced area for recreational use

Opportunities:

- Reduce damages to properties and infrastructure caused by erosion
- Maintain or increase wildlife habitat
- Maintain or increase area for recreational use

Goals and Objectives

- Reduce shoreline erosion along the shoreline of Walton County.
- Reduce the potential for storm damages caused by hurricanes and storms along the shoreline of Walton County.
- Restore beach and dune ecosystem habitats along the shoreline of Walton County.
- Increase the recreational opportunities along the shoreline of Walton County.

Items of Critical Concern

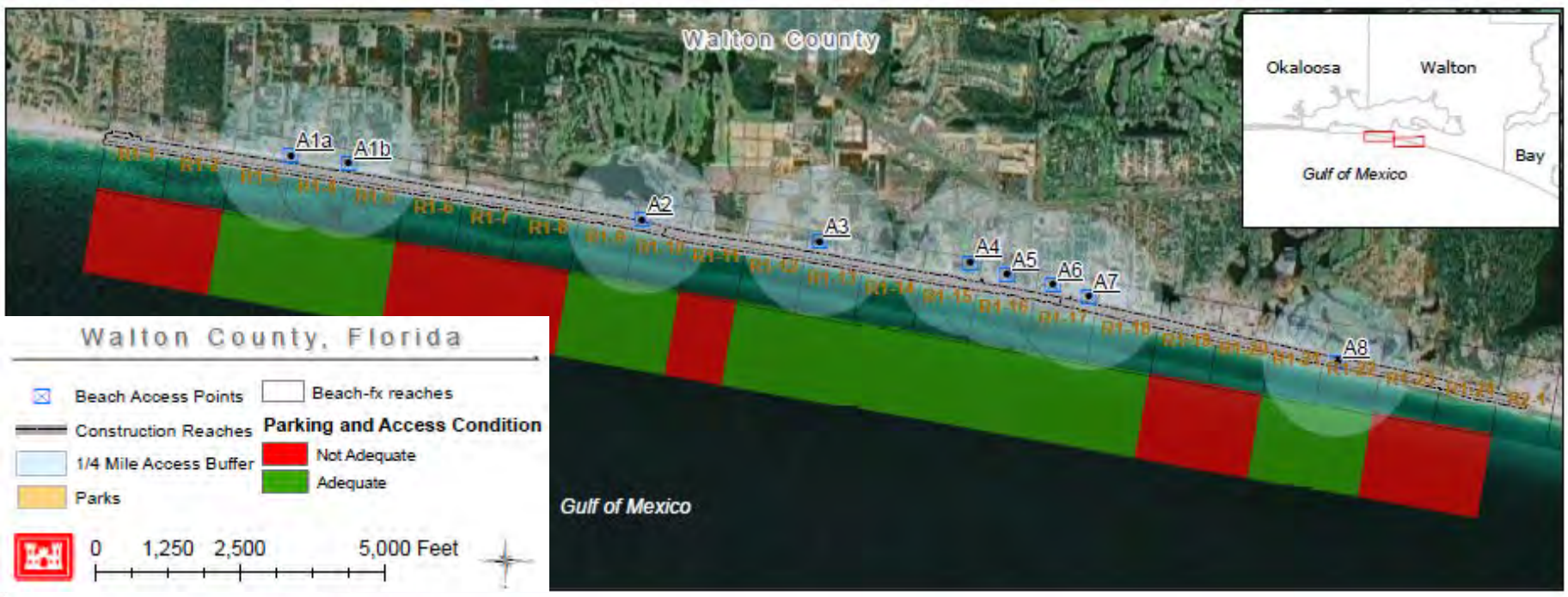
- Parking and Access
- Coastal Barrier Resources Act (CBRA) Zones
- Coastal Dune Lakes
- Sea Level Rise
- Sand Availability

Parking and Access

- Sufficient parking must be available within a reasonable walking distance on free or reasonable terms.
- Reasonable public access must be furnished to comply with the planned recreational use of the area.

- Public use is construed to be effectively limited to within one-quarter mile from available points of public access to any particular shore.
- Federal cost sharing ratio of 65 to 35 is adjusted based on adequacy of public access and parking.

Parking and Access



- Green reaches denote adequate parking and access.
- Red reaches denote parking/access issues. If reach is to be included participation is 100% non-Federal.

Coastal Barrier Resources Act (CBRA) Zones

- CBRA was passed in 1982, to address problems associated with coastal barrier development.
- Designated areas are ineligible for Federal expenditures that would encourage development of fragile, high-risk, and ecologically sensitive coastal barriers.
- Six designated zones lie along the Walton County shoreline.

Coastal Barrier Resources Act (CBRA) Zones

Developed by U.S. Fish and Wildlife Service

Coastal Barrier Resources Act (CBRA) Zones

- Corps has taken steps to ensure that any and all work within the concerned CBRA zones will be 100% funded by the local sponsor.
- No federal funding will be used towards construction within the CBRA areas.
- Local sponsor will not receive any in-kind credits for their efforts that fall within these CBRA areas.

Coastal Dune Lakes

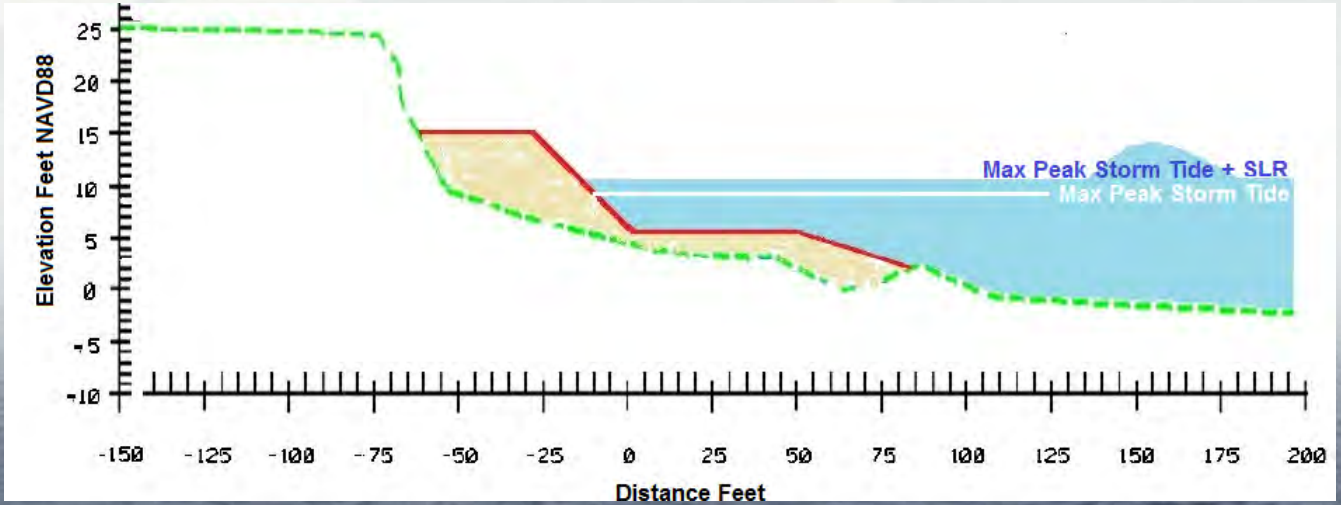
- 15 Coastal dune lakes are a unique resource of the Walton County.
- Some of these lakes are within CBRA Zones.
- Rare worldwide and almost exclusive to the U.S. Gulf Coast
- Lakes are about five feet deep and some intermittently breach the dune system and discharge directly into the Gulf of Mexico.

- No beach or dune fill is proposed that would block or inhibit the natural breaching or closing process of these coastal dune lakes.

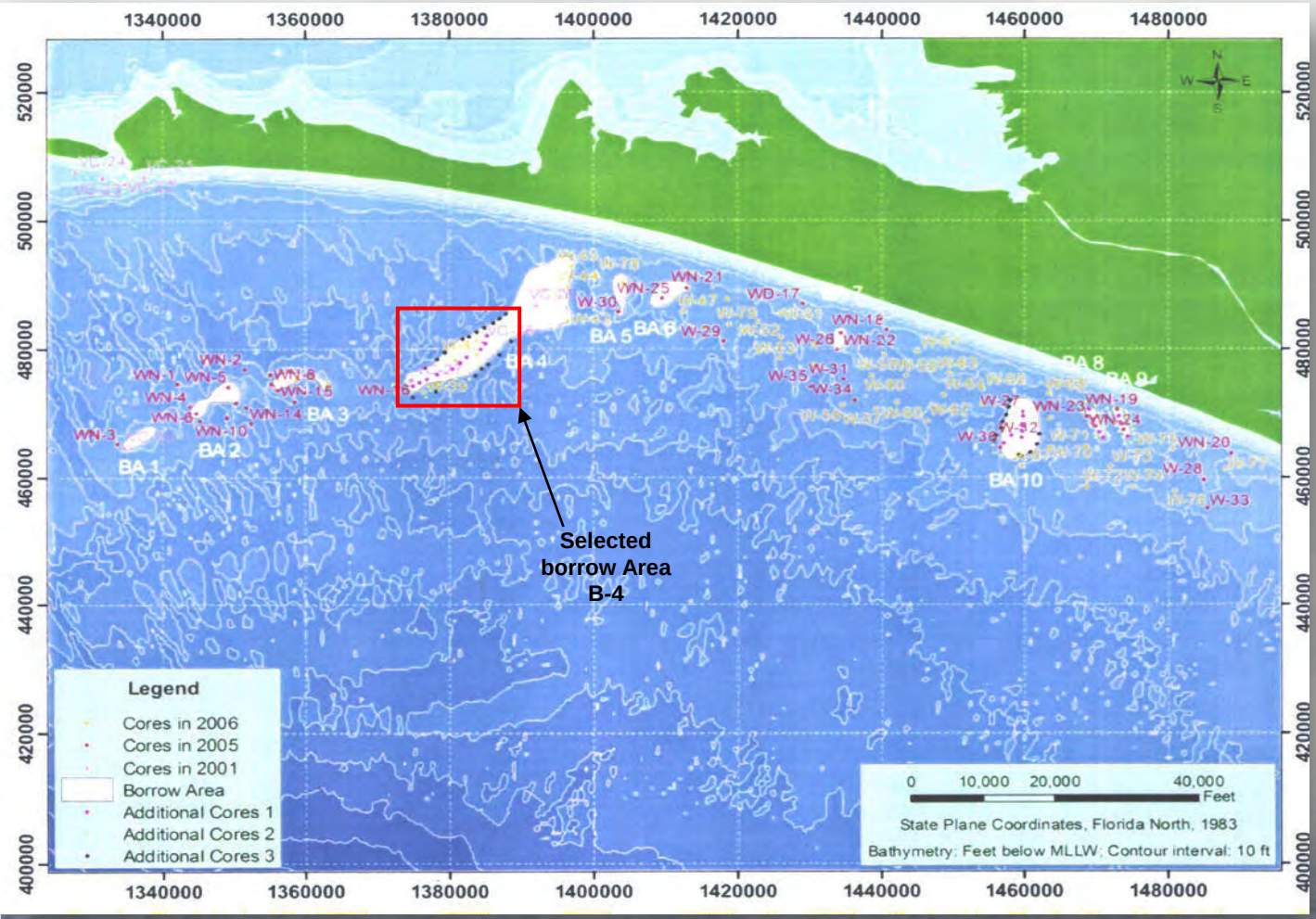
Sea Level Rise (SLR) – EC 1165-2-212

- 3 scenarios of relative SLR, Low, Intermediate, and High, over the 50 year project Life were evaluated: 0.3 feet | 0.8 feet | 2.1 feet
- Rate of shoreline recession due to accelerated SLR over the next 50 years based on the analysis would not exceed the background erosion rate used in the optimization of the advance nourishment berm.

  0.4 ft/yr | 0.8 ft/yr | 2.4 ft/yr
- An evaluation of relative SLR will be conducted prior to each renourishment event.



Sand Availability



- Investigations were conducted to identify areas of suitable borrow material for fill.
- Material is of sufficient quantity and quality.
- Auxiliary site also identified if needed.

Value of Development Subject to Damage (in millions)

	Reach				
Description	1	2	3	4	5
Damageable Elements	366		514	175	814
Structure Values	$317.3		$164.9	$33.7	$276.9
Content Value	$156.1		$78.9	$16.2	$133.5
Total Reach Values	$473.4		$243.8	$49.9	$410.4
Grand Total	$1,177.5				

Without Project Damages (in thousands)

Description	Reach				
	1	2	3	4	5
Average Structure Damage	$14,139	$10	$19,554	$3,863	$16,501
Average Content Damage	$6,011	$0	$5,266	$1,555	$4,482
Average Total Damage	$20,150	$10	$24,821	$5,418	$20,983
Average Annual Damages	$1,083	$0.5	$1,333	$291	$1,127

Alternative Formulation

The initial list of management measures considered by the PDT included the following:

- No Action
- Seawalls
- Bulkheads
- Revetments
- Breakwaters
- Groins
- Beachfill
- Land use regulations
- Acquisition (buyouts)
- Retreat

Screening Criteria

Screening criteria were developed to compare and screen the various measures to formulate as alternative solutions. The screening criteria are:

- Reduce shoreline erosion
- Reduce potential for storm damages
- Agreeable to the public
- Protect fish and wildlife resources
- Preserve cultural resources
- Engineering Feasibility
- Economic Feasibility
- Environmental Feasibility

Alternatives Developed

After the initial screening of the measures, the alternatives that could be implemented are:

- Non-structural
  - Acquisition

- Structural
  - Beachfill

Acquisition Alternative

- Would remove all damageable structures from the front lots.
- Would eliminate about 81% of the damage elements in study area.
- Reduce total average damages about $57,819,000.
- Reduce average annual damages about $3,106,000.
- Approximate cost $3.42 billion.
- Approximate annual cost $93,303,000.

Beach Fill Alternative

Considerations

- Dunes provide principal protection for damageable structures.
- Dunes are protected by shoreline berm.
- Alternative plans should not change existing natural berm height.
- Alternative plans should not change existing natural dune height.

Process

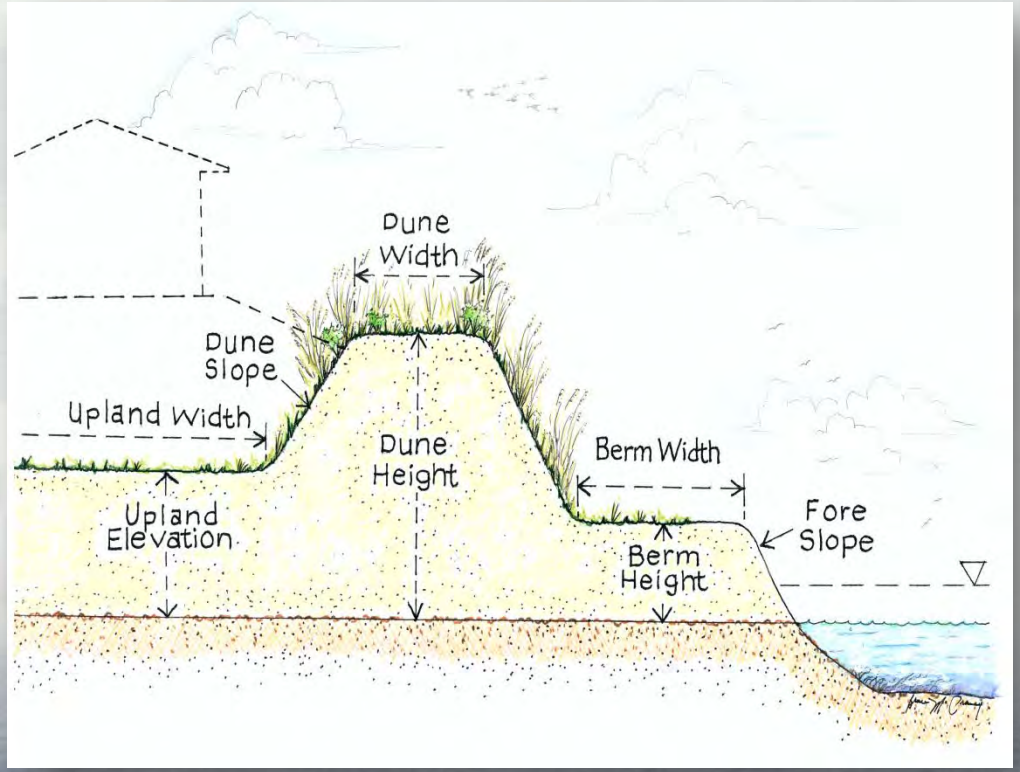
1. Evaluate berm width alternatives and optimize.
2. Evaluate dune width alternatives and optimize.

Approved Models Used During Evaluation

- Storm-Induced Beach Change Model (SBEACH)
- Generalized Model for Simulating Shoreline Change (GENESIS)
- Shoreline Response Database (SRD)
- Beach-*fx*

Beach-fx

BEACH-*FX* PROFILE



Variables used within Beach-*fx* are:

- Dune Width
- Dune Height
- Berm Width
- Upland Width
- Dune Slope
- Berm Height
- Fore Slope
- Shape of the Submerged Profile

Optimizing the Berm Width

Initially, four alternatives were analyzed

- Minimum – 50-foot berm width
- Small – 75-foot berm width
- Medium – 100-foot berm width
- Maximum – 125-foot berm width

Results from the analysis of the four berm alternatives:

- Not all sub-reaches were cost justified.
- For those reaches that were cost justified **the net benefits maximized on the minimum berm width** alternative.

Optimizing the Dune Width

Having determined the optimal berm width for construction, the next phase of analysis optimized added dune width.

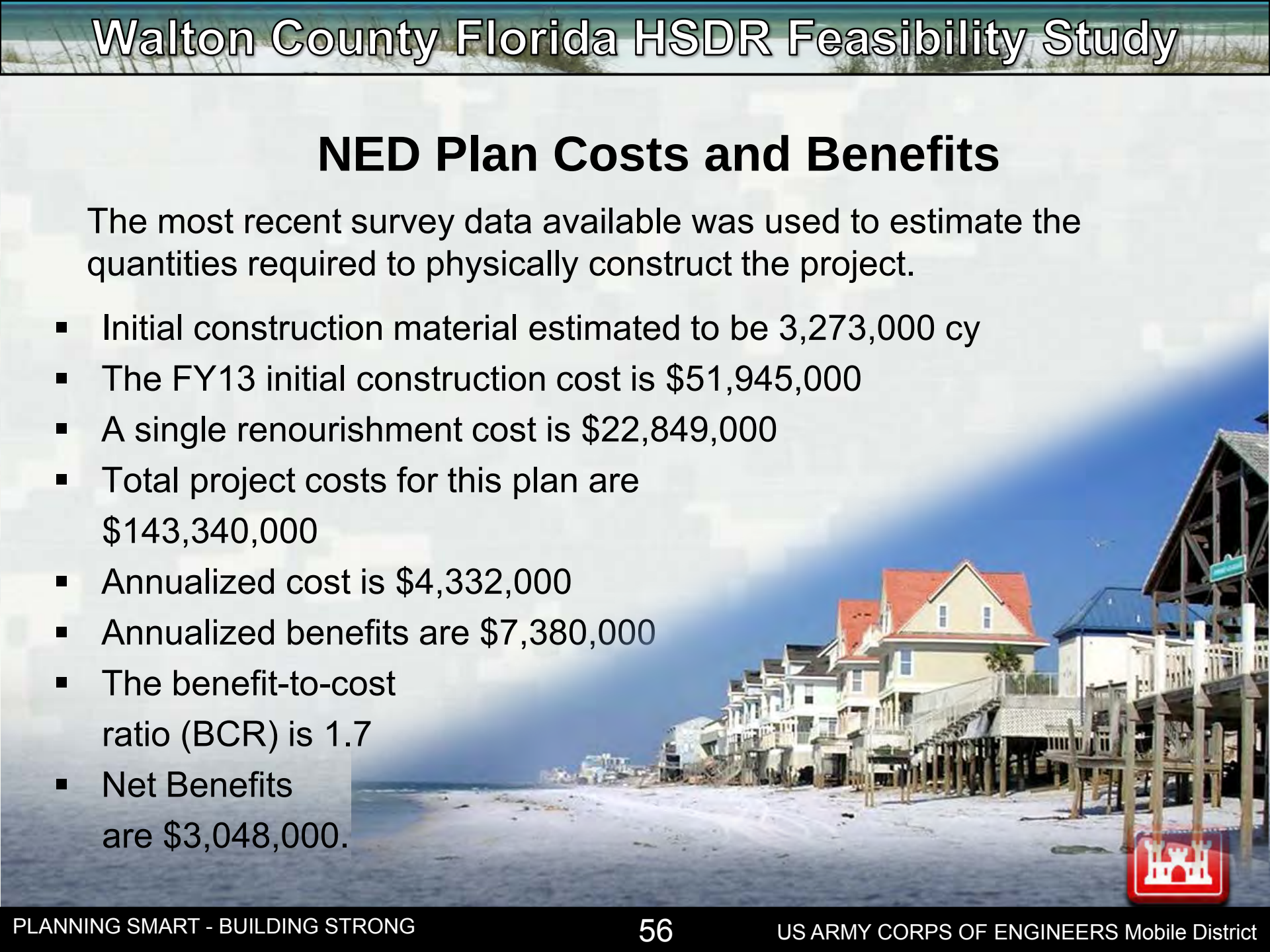
Four alternatives were analyzed in Beach-*fx.*

- No added dune width
- 10-foot added dune width
- 20-foot added dune width
- 30-foot added dune width
- The optimized dune widths were determined to be either 10 or 30 feet in width depending on the location.

NED Plan Costs and Benefits

The most recent survey data available was used to estimate the quantities required to physically construct the project.

- Initial construction material estimated to be 3,273,000 cy
- The FY13 initial construction cost is $51,945,000
- A single renourishment cost is $22,849,000
- Total project costs for this plan are $143,340,000
- Annualized cost is $4,332,000
- Annualized benefits are $7,380,000
- The benefit-to-cost ratio (BCR) is 1.7
- Net Benefits are $3,048,000.



Locally Preferred Plan (LPP)

- Discussion with Sponsor resulted in development of a LPP.
- The sponsor desires a larger plan than the NED plan.
- The LPP includes unjustified sub-reaches.
- There will be four renourishment cycles on a 10-year interval. For the initial nourishment and four renourishments, the total material needed is about 11,024,000 cy.

LPP Plan Costs and Benefits

The most recent survey data available was used to estimate the quantities required to physically construct the project.

- Initial construction material estimated to be 3,868,000 cy.
- The FY13 initial construction cost is $61,397,000.
- A single renourishment cost is $25,760,000.
- Total project costs for this plan are $164,437,000.
- Annualized cost is $5,044,000.
- Annualized benefits are $7,570,000.
- The benefit-to-cost ratio (BCR) is 1.5
- Net Benefits are $2,526,000.

LPP and NED Differences

LPP and NED Differences

LPP & NED Compared		
	LPP	NED
Initial Construction Cost	$61,397,000	$51,945,000
Total Project Costs	$164,437,000	$143,340,000
BCR	1.5	1.7
Net Benefits	$2,526,000	$3,048,000
Project Length	18.8*	15.2
*The additional project length included in the LPP is 3.6 miles.		

Selecting a Plan

- Both the NED and LPP beach fill plans were found superior to the Acquisition and No Action plans.
- Waiver approved by the Assistant Secretary of the Army for Civil Works that allows the Corps to recommend the LPP (Memorandum dated 7 FEB 2012).
- As such the LPP is the Recommended Plan.

Cost Share

- Typical Federal cost sharing is 65 to 35.
- Adjustments to this ratio are made based on adequacy of public access and parking, whether private shoreline is being protected, and if any economically unjustified reach is being included in the recommended plan.
- Portions of the project which do not meet these criteria are a 100 percent non-Federal partner's expense.
- The cost share percentages are 28 percent Federal and 72 percent non-Federal for the LPP.

Risk Management

- Project is “Moderate risk”
  - Recommended plan does not have significant risk or uncertainty
- Considerations Include:
  - System Effects
    - Tropical Storm Frequency and Intensity
    - Sea Level Rise
  - Cost and Benefit Analysis
    - Timing and availability of funds
    - Parking and access
    - Sand availability and volume needed

Risk Management (Continued)

- Measures to reduce risk and uncertainty include:
  - Suite of engineering and economic models applied including GENSIS, SBEACH and BeachFX.
  - Storm response database utilized consisting of 46 historical storms derived from 119 years of available storm record (1886 through 2005) applied over 12 water surface elevations.
  - Utilized Beach-*fx* for analyzing 100, 50 year life cycle simulations for various berm and dune scenarios to develop cost effective alternatives.
  - Based on detailed geotechnical investigations, borrow areas containing an adequate supply of compatible borrow material for the project were identified.
  - Archeological surveys conducted.
  - Fill volumes updated based on most recent survey (2010).

Environmental Compliance

- NEPA Documentation
  - Environmental Assessment (EA) determined to be appropriate level of environmental documentation
  - Reaffirmation of determination with interagency team
  - Includes 404(b)(1) Evaluation Report (Clean Water Act (CWA))

- Water Quality Compliance/Coastal Zone Consistency
  - Application being prepared for recommended plan

Environmental Compliance (continued)

- Endangered Species Act – Section 7 Coordination (Fish & Wildlife Service (FWS) and National Marine Fisheries Service(NMFS))
  - Consultation completed with FWS and NMFS for recommended plan
  - Regional Biological Opinion for use of hopper dredges
  - Programmatic Biological Opinion for beach placement and shore protection for the State of Florida
  - Biological Opinion for non-nesting piping plover

- Essential Fish Habitat - Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA)
  - Consultation completed for recommended plan

Environmental Compliance (continued)

- Coastal Barrier Resources Act (CBRA) Coordination
  - Designated CBRA zones exist within the proposed project area
  - Coordination with FWS has been completed
  - FWS concurs CBRA not an issue if no Federal funds are used within CBRA zones
- National Historic Preservation Act - Section 106 Coordination
  - Cultural resources survey conducted
  - Coordination with the Florida Division of Historic Resources completed for recommended plan

Public Involvement

- Non-Federal sponsor proactive in insuring that the public has been informed of the process as well as status of the feasibility study.
- Non-Federal sponsor's POC is a consultant with the TDC, that receives monthly study updates.
- Information briefed to the TDC and non-Federal sponsor leadership is a matter of public record.
- In the last two years, non-Federal sponsor conducted two workshops regarding this project.
- Draft report made available to the public for their review and comment per announcement in local newspaper and mail-out to interested individuals and agencies.

Technical Reviews

- District Quality Control (DQC)
  - Review certified 12 September 2012
- Agency Technical Review (ATR)
  - Review managed by Coastal Storm Damage Reduction PCX
  - All ATR Comments Resolved
  - Certification completed 30 October 2012
  - Cost DX Certification received 24 October 2012
- Independent External Peer Review (IEPR)
  - Review endorsed 9 August 2012
  - Eighteen Final Panel Comments
  - All Comments resolved except two

Technical Reviews (Continued)

- IEPR Comments

1) Reviewer's Comment: That the economic analyses were reported as point estimates and didn't include a thorough assessment of risk and uncertainty as required by ER 1105-2-101, Risk Analysis for Flood Reduction Studies.

   - Corps' Response: Non-Concur. The Corps used the national model, Beach-*fx*. It evaluated and optimized added berm and dune widths. Risk statistics were added to the report for the NED and LPP per the cited ER.

2) Reviewer's Comment: Decision criteria for selecting the NED plan and LPP were not provided.

   - Corps' Response: Non-Concur. The Corps' reiterated that its decision criteria was to select the plan that maximized net benefits.

Study Summary

- The plan recommended for construction consists of five construction reaches.
- The project is composed of a 50-foot wide berm.
- The project will also feature added dune width in all construction reaches of either 10 or 30 feet.

Details of Recommended Project

ITEMS	Recommended Plan
Initial Nourishment Volume (cy)	3,868,000
Volume of Each Renourishment (cy, 4 total)	1,789,000
Project Initial Cost	$61,397,000
Federal Share	$17,191,000
Non-Federal Share	$44,206,000
Project Renourishment Cost	$103,040,000
Federal Share	$23,699,000
Non-Federal Share	$79,341,000
Total Project Cost	$164,437,000
Total Annual Costs	$5,044,000
Total Annual Benefits	$7,570,000
BCR	1.5 to 1
Annual Net Benefits	$2,526,000

Recommendation

Civil Works Review Board approve release of the Walton County, Florida HSDR Feasibility Report and Environmental Assessment for State and Agency Review.

Questions?

Walton County, Florida
Hurricane and Storm Damage Reduction Study
Feasibility Report and Environmental Assessment

AGENCY TECHNICAL REVIEW (ATR)

Mr. Richard Heidebrecht

ATR Lead, National Planning Center of Expertise for Coastal Storm Damage Reduction

ATR Team

Team Member	ATR Role	Corps of Engineers Office Symbol	Phone Number
Richard Heidebrecht	ATR Team Lead - Plan Formulation	CENAE-EP-PN	978-318-8513
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Diane Rahoy	Hydraulics/Coastal Engineering	CENAN-EN-H	917-790-8263
Hugh Heine	Environmental - NEPA Compliance	CESAW-TS-PE	910-251-4070
Jonathan Kullberg	Geotechnical Engineering	CENAE-EP-WG	978-318-8178
Edmund J. O'Leary	Economics	CENAE-EP-VC	978-318-8235

ATR Process

- **Reviews completed for:**
  - **Draft Feasibility Report**
  - **Draft Final Feasibility Report**
- **115 comments generated during review process (not including cost certification review)**
  - **Draft Feasibility Report 86 comments**
  - **Final Feasibility Report 29 comments**
- **Good interaction between PDT and ATR team.**
  - **Team and individual phone calls**
  - **Emails**
- **All comments have been closed.**

Primary Issues – Draft Feasibility Report

- **Draft Feasibility Report:**
  - Concerns regarding the project's sensitivity to sea level rise
  - Specific questions regarding model calibration
  - Use of outdated economic and census data
  - Suggestions to improve presentation of NED Plan and LPP
  - Adequacy of parking to support Federal interest
  - Significant inconsistencies between the main report, EA and various appendices (project dimensions, renourishment cycles, etc.)
  - Justification of advance nourishment berm
  - Plan formulation process (study goals and objectives)
  - Add/revise figures for clarity

Primary Issues – Draft Final Feasibility Report

- **Draft Final Feasibility Report**
  - Status of Fish and Wildlife Coordination Act report
  - Compatibility of borrow area sand
  - Expand discussion of post oil spill sampling and testing
  - Discussion of sea level change and potential impacts on future borrow area requirements and renourishment costs
  - Clarification of Sponsor real estate requirements
  - Revise discussion of recreational benefit calculation
  - Many of the comments submitted concerned clarification of the report's text regarding costs, benefits and impacts of the NED plan and LPP.

Walton County, Florida, Hurricane and Storm Damage Reduction Project Draft Feasibility Report and Environmental Assessment

Presented to the CWRB on
December 13, 2012

Battelle

Karen Johnson-Young
Program Manager

Julian DiGialleonardo
Project Manager

IEPR – Walton County, Florida

The Walton County IEPR was conducted in 2012

- Final IEPR Report Submitted on 7/09/12
- Comment-Response Results Documented on 8/08/2012

Walton County Panel Members	Panel Discipline
Walter Milon, *Ph.D.*	Economics
Jennifer Irish, *Ph.D., P.E., D.CE*	Coastal Engineering
Kris Thoemke, *Ph.D., CEP*	Environmental/Biology
Barton Rogers, *M.S.*	Plan Formulation

IEPR – Walton County, Florida Report/Results

Final IEPR Report submitted on July 9, 2012

Results:

- 18 Final Panel Comments
  - 9 high significance
  - 8 medium significance
  - 1 low significance

Post-Final Panel Comments/Response results documented on August 8, 2012

Results:

- PDT Evaluator Responses to Final Panel Comments
  - 15 concurs, 3 non-concurs
- Panel Backcheck Responses to the PDT Responses
  - 16 concurs, 2 non-concurs

IEPR – Walton County, Florida Report/Results

Notable Panel Findings from the Final Report

1. The Walton County project generally followed USACE planning guidance
2. The Panel recognizes the pioneering effort to use Beach-fx in the planning process
3. The storm set selection was based on older multiple storm events, and did not incorporate more contemporary methods
4. It was unclear how uncertainties quantified for the engineering analyses were incorporated into the economic evaluation
5. The economic analyses relied on limited data, and partial analysis of project alternatives
6. Probabilistic descriptions of expected outcomes of project alternatives, required by USACE guidelines, were not provided
7. The physical and environmental aspects of the borrow area have not been thoroughly described or quantified
8. The implications of the 2010 Deepwater Horizon oil spill, and the potential impacts to the project were not fully discussed

IEPR – Walton County, Florida

Conclusions

- All concerns and questions brought forward by the Panel were addressed by the PDT to the satisfaction of the Panel, with the exception of the following two issues that resulted in Non-Concurs from the Panel.
  - The results of the economic analysis were reported as point estimates and did not include a thorough assessment of risk and uncertainty as required by ER 1105-2-101.
  - The decision criteria for selecting the NED plan and TSP were not provided.
- The Panel and PDT agreed to disagree on these two issues.

HQUSACE POLICY REVIEW CONCERNS

Civil Works Review Board

Walton County, Florida

Coastal Storm Damage Reduction Project

Andrea Walker
Office of Water Project Review
Planning and Policy Division
Washington, DC – 13 December 2012

HQUSACE Team Reviews:

- AFB was held in December 2009
- Draft report review June 2011 & June 2012
- LPP Waiver Request January 2012
- Final Feasibility Report /EA: current review being completed by HQUSACE team

Policy Issues from AFB & Draft Report Reviews

- **Price Level / Discount Rate**
- Plausible Storm Set
- Residual Risk/Damages
- **Period of Analysis, Base Year**
- Economic Analyses (Inventory, Content Value, Land Loss)
- Number of Renourishments
- **Plan Optimization (Dune & Berm Widths)**
- **Parking / Public Access (Cost Sharing)**
- Sea Level Change
- Coastal Lake Resources
- MCACES Cost Summary
- Value Engineering
- **Locally Preferred Plan**
- Local Cooperation
- Cost Sharing
- Datum
- Environmental Assessment Impact Assessment/Alternatives
- Environmental Compliance
- **Public / Agency Coordination**

Significant Areas of Policy Concern:

- Price Level/Discount Rate
- Period of Analysis, Base Year
- Plan Optimization
- Parking & Public Access
- Locally Preferred Plan
- Public/Agency Coordination

Price Level / Discount Rate

- **CONCERN:** AFB documentation used an incorrect price level and discount rate.

- **REASON:** ER 1105-2-100, D-6 (and corresponding FY EGM) requires studies to utilize the current discount rate for the fiscal year in which the package is submitted.

- **RESOLUTION**: The District has prepared an Errata sheet to include in the report that uses the FY13 price level/discount rate which is under review.

- **RESOLUTION IMPACT**: Pending report revisions, concern resolved.

Period of Analysis, Base Year

- **CONCERN:** AFB documentation anticipated a Base Year of January 2011.

- **REASON:** Per ER 1105-2-100 (2-4j & D-6) the appropriate base year for project planning should be set for when the project is expected to be complete and producing benefits.

- **RESOLUTION**: During remainder of study the Base Year was updated, however inconsistencies remain.

- **RESOLUTION IMPACT:** Pending report revisions, concern resolved.

Plan Optimization

- **CONCERN:** AFB documentation did not clearly articulate the increments used in the formulation and modeling.

- **REASON:** The report should discuss the basis for the NED plan designation relative to bracketing and maximization of net benefits to assure that the optimum plan has been identified as NED per ER 1105-2-100, para. 2-3.f.

- **RESOLUTION:** The District provided further discussions regarding plan formulation and bracketing for plan selection to the report.

- **RESOLUTION IMPACT:** Concern is resolved.

Public Parking & Access

- **CONCERN:** The AFB documentation oversimplified the presentation of cost sharing of the project based on land use, public access and ownership in accordance with ER 1165-2-130.

- **REASON:** Sufficient parking and public access is required for Federal participation.

- **RESOLUTION:** Reach-by-Reach analysis of ownership, access points, and parking performed to determine cost share. Only those reaches that met all aspects were considered for cost sharing.

- **RESOLUTION IMPACT:** Concern is resolved.

Locally Preferred Plan

- **CONCERN:** AFB documentation intended to recommend a (Locally Preferred) Plan that was larger than the NED Plan.

- **REASON:** ER 1105-2-100 (Paragraph 2-3.f) requires approval of the Assistant Secretary of the Army for Civil Works when recommending a LPP.

- **RESOLUTION:** Analysis of existing and FWP recreation analysis added to Economic Appendix. Adequate parking is available within a reasonable distance (1/4 mile).

- **RESOLUTION IMPACT:** Concern is resolved.

Public/Agency Coordination

- **CONCERN:** Draft Report documentation did not include a summary of input received during public and resource agency review of the Draft Feasibility Report.

- **REASON:** ER 1105-2-100, B-5(d) requires that Feasibility Reports include a description of how input was used in the decision-making process.

- **RESOLUTION:** A summary of public/agency review was added to the main report.

- **RESOLUTION IMPACT:** Pending report revisions, concern resolved.

HQUSACE POLICY COMPLIANCE REVIEW TEAM RECOMMENDATION

Approval to release the draft Chief's Report – Feasibility Report and EA for S&A Review.

- Subject to document revisions reflecting current review of the Final Report.

BOARD DISCUSSION

Lessons Learned

- Early engagement of stakeholders and support agencies are important toward identifying environmental issues early on in the study process. Such engagement is also helpful in determining the appropriate level of NEPA documentation.
- Early coordination with sponsor in regards to federal requirements for real estate acquisition is critical to meet Project Schedule
- Based on the extensive review and unforeseen changes in the MCACES,TPCS and Risk Analysis, the Cost MCX/TCX can begin their review process before the technical ATR officially begins in order to minimize schedule impacts to certification receipt and the economic team's efforts.
- Usage of certified models can speed study process.
- Usage of existing data can speed study process. For Walton County, we were able to utilize geophysical data (which can be a time consuming effort to obtain) collected by the sponsor as well environmental data that had also been collected.

Lessons Learned

- If a study is serving as a test bed for a new model that is yet to be certified (flying the airplane while building), there could be impacts to the schedule caused by the inherent uncertainty in the modeling process (enhancements, updates and bugs, for example). This information should be communicated early with the PDT, vertical chain, and sponsor and regular updates provided regarding study progress.
- Life cycle analysis is well suited for large scale coastal hurricane storm damage reduction projects, such as Walton County. The approach reduces the uncertainty in project performance; however, the process can be very data and processing intensive. This should be clearly communicated to stakeholders.
- There is often a lag between implementation of guidance and capability of applied tools. This was the case for Walton County with Sea level rise guidance and earlier versions of Beach-*fx*. Future Hurricane Storm Damage Reduction project utilizing Beach-*fx* should utilize the model to assess implications of potential sea level rise.
- As a study schedule lengthens, additional factors can come into play to further lengthen the schedule and affect study costs (changed physical conditions from additional storms, implementation of new guidance, change in PDT members).